US 421 from SR 1171 to I-40
Project U2728

The subject project is included in the 1990-1997 Transportation Improvement Program but without accompanying schedules. This report provides a brief analysis of possible improvements. The project is not currently funded.

I. Location, Type of Facility and Scope of Study

The section of US 421 covered in this study begins at I-40 Project, I-900 and terminates 0.35 mile north of SR 1171 in Forsyth County (See Figure 1)

The Feasibility Study investigated one project on US 421. The project is as follows:

Project U2728: Forsyth County from approximately 0.35 mile north of SR 1171 to I-40 Project I-900, the length of this project is approximately 5.2 miles.

The subject section of US 421 consist primarily of 4 lane divided highway with 2 lanes north and 2 lanes south. With 24 feet pavement, 4 feet of shoulder on right lanes and a 36 foot median. The existing pavement, shoulder widths, guardrail, signing and drainage structures were constructed in January 1961.

II. Summary of Needed Improvements.

The primary emphasis of the study was to evaluate the pavement rehabilitation and safety improvements.

A) Pavement Rehabilitation

The results of this study reveal that it would be feasible and desirable to mill 100% of the right lanes and 50% of the left lanes north and southbound. In areas that are milled to replace with B.C.B.C., Type H to existing pavement elevation and resurface both lanes with I. There are 4 (Structure Numbers 187, 196, 213 and 226) overhead bridges. Existing pavement elevations should be maintained beneath these. There are two bridges over Muddy Creek (Structure Numbers 222N and 221S) that should not be resurfaced. Pavement on left and right lanes should be mulled to tie to existing bridge pavement grade. The pavement markings will be thermoplastic with surface mount markers.

B) Safety Improvements

1) Guardrail

The results of this study reveal that it would be feasible and desirable to replace approximated 7,050 feet of guardrail in the northbound lane and ramps and 5,025 feet of guardrail in the southbound lane that needs replacement to meet the 1990 Standards. Approximately 20 BCT-1 Units and 20 CAT 1 Units would also be needed with guardrail end delineation and guardrail delineators.

It also revealed that pier protection would be feasible and desirable at Structure Numbers 187, 196, 213, and 226 for exterior bents and the interior bents in median. This also would require 24 BCT-1 Units, 8 CAT-1 Units, guardrail end delineation and guardrail delineators.

Post Mounted Delineators would also be feasible and desirable along main line and ramps where missing.

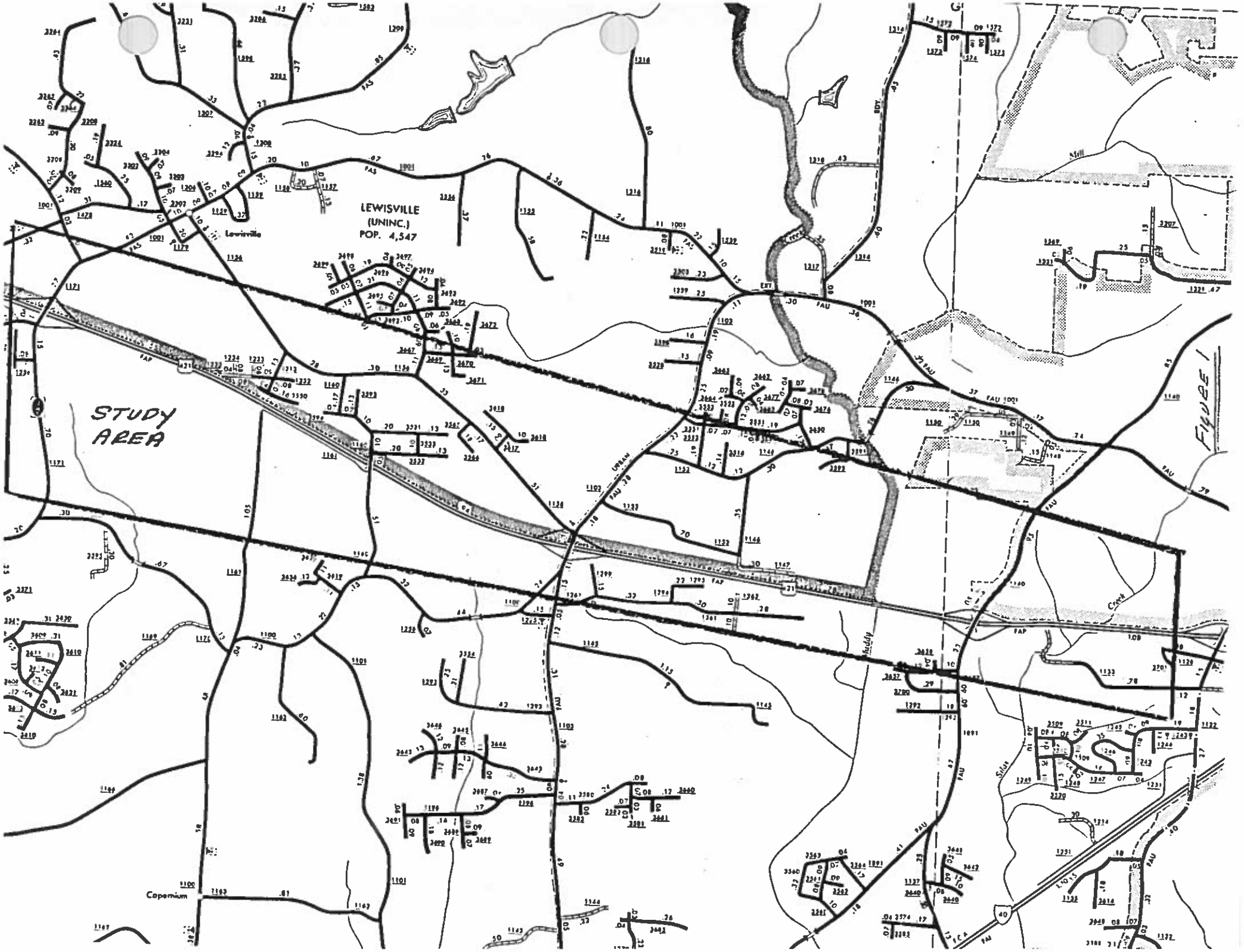
2) Signs

There are approximately 28 signs for which it would be feasible and desirable to replace existing posts with posts that meet 1990 Standard's.

3) Drainage Structures

The study also revealed that there are approximately 66 catch basins in median and side ditches. These should be converted to drop inlets with frame and 2 grates.

The estimated cost for all the above items also including all necessary traffic control devices and engineering cost is approximately $1,200.000.00.


LEWISVILLE
(UNINC.)
POP. 4,547
STUDY AREA
Lewisville
Copernium
Figure 1